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<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	09/622,523	ISAKSSON ET AL.	
	Examiner	Art Unit	
	Phuong Phu	2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 2/8/06.
2. ☒ The allowed claim(s) is/are 1,2 and 4-47.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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### **REASONS FOR ALLOWANCE**

1. This Office Action is responsive to the Amendment filed on 2/8/06.
2. Claims 1, 2 and 4-47 are allowed.

The following is an examiner's statement of reasons for allowance: References (5,790,516), (6,393,051), (6,404,830) and (5,357,502) are additionally cited because they are pertinent to the claimed invention.

As per independent claims 1 and 33, none of prior art of record discloses all the limitations of the claimed invention. Bingham (6,035,000), previously cited, in view of Gudmundson et al (5,790,516), previously cited, teaches a extension means for cyclic extension of a DMT symbol wherein said cyclic extension comprises a suffix which is greater than, or equal, to a channel's propagation delay; and prefix which is greater than or equal to a guard time needed to eliminate inter-symbol interference. In Bingham in view of Gudmundson et al, the extension means for cyclic extension of a DMT symbol wherein said cyclic extension comprises of a prefix of a given length. It would not have been obvious for one skilled in the art to implement the combination of Bingham and Gudmundson et al in view of other prior art of record in order to lead such the implementation to the claimed invention.

As per independent claims 11 and 34, none of prior art of record discloses all the limitations of the claimed invention. Bingham discloses the invention except he fails to teach procedures/devices of windowing a DMT symbol which transmits on a transmission channel by multiplying a first number of samples at the beginning and end of a block of  $2N$  plus the first number of samples, wherein  $2N$  defines a second number of samples in a DMT symbol; folding and adding the first number of samples divided by two from the beginning of the block to the end

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of  $2N$  remaining samples; and folding and adding the first number of samples divided by two from the end of the block to the beginning of the  $2N$  remaining samples, and removing said cyclic extension from a DMT-symbol. It would not have been obvious for one skilled in the art to implement Bingham in view of other prior art of record in order to lead such the implementation to the claimed invention.

As per independent claims 17, 24, 31 and 32, none of prior art of record discloses all the limitations of the claimed invention. Bingham fails to teach, at least, procedure/device of reducing the frequency content of a time domain symbol so as not to interfere with other symbols on other transmission channels by pulse shaping the time domain symbol to form pulse-shaped wings on the time symbols. It would not have been obvious for one skilled in the art to implement Bingham in view of other prior art of record in order to lead such the implementation to the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Phuong Phu*

Phuong Phu  
04/24/06

**PHUONG PHU  
PRIMARY EXAMINER**

Phuong Phu  
Primary Examiner  
Art Unit 2611